

REMARKS

Claim 8 has been cancelled. Claim 5 remains withdrawn. However, Claim 24 is clearly generic and Claim 5 clearly reads onto the elected species of Figure 3. Reinstatement of Claim 5 is respectfully solicited. Accordingly, reconsideration of Claims 2-6, 9-15 and 24 is respectfully solicited.

The Examiner's objections to the drawings has been noted. Accordingly, a new Figure 10 is herewith proposed. Figure 10 is discussed in amended paragraph [0005]. Incidentally, Figure 10 corresponds in content to Figure 2 of newly cited U.S. Patent No. 6 488 078.

Claim 4 has been amended to cure the informality noted by the Examiner.

Applicants respectfully request reconsideration of the Examiner's objection to the expression "up to 20%" used in Claim 9. It does not include "0" because Claim 24 positively recites a "re-entrant groove". If "0" depth were considered to be an option (as the Examiner has apparently opined), there would be no groove (contrary to the specific language of Claim 24). Applicants respectfully submit that Claim 9 complies with the provisions of Title 35 USC 112 (second paragraph).

Applicants respectfully traverse the Title 35 USC 102 Fujikake based rejection of Claim 24 and the claims which depend therefrom. Fujikake (cited by Applicants) clearly discloses completely formed fins 19 between the roots of which lies the primary groove 12 having a bottom wall 101. The tips of the completely formed fins 19 are deformed to produce "mountain-shaped fins" 105. Thus, the material of the tips of the fins is deformed to close off the space between the fins at a location spaced upwardly from the bottom wall 101.

In Applicants' invention, on the other hand, the base of primary groove, namely, the plane A-B, corresponds to Fujikake's bottom wall 101. Applicants' re-entrant groove is recited as being formed in the base of the primary groove and between the roots of the completely formed fins. This structural limitation clearly does not read onto Fujikake (contrary to the Examiner's implied assertion due to the citation of Title 35 USC 102 as the basis for the rejection). Clearly, the region between the "mountain-shaped fins" 105, and whereat exists the knurled surfaces 106, does not qualify (even by a stretch of the imagination) as the base of the primary

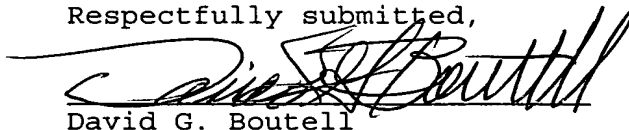
groove. Accordingly, Applicants respectfully submit that Claim 24 and the claims which depend therefrom patentably define over Fujikake as required by the provisions of Title 35 USC 102.

Applicants also respectfully traverse the rejection of Claim 24 and the claims which depend therefrom based on a combination of teachings in Masukawa et al and McLain (McLain being newly cited). More specifically, and contrary to the Examiner's assertion, a person of ordinary skill in the art will not combine disclosures about inside and outside structures due to their completely different manufacturing process (see McLain at Column 4, lines 20-23). More precisely, the inner structure of McLain is manufactured by a strip forming and welding process, whereas the external structures of Applicants' invention are roll formed on round tubes. As explained in Applicants' paragraph nos. [0042] and [0043], the Masukawa et al teaching relates only to structure on the inside of the tube (as the Examiner has also noted). Welded seams prevent continuity of the primary grooves around the periphery of the tube. Thus, Applicants respectfully submit that one of ordinary skill in the art would not provide re-entrant grooves on the outside of a tube based on a combination of the teachings in Masukawa et al and McLain. The motivation for the combination is wholly lacking in these references.

The Examiner's references to Nishizawa et al and Beutler et al add nothing which would cure the inapplicability of Masukawa et al and McLain.

Accordingly, further and favorable consideration of this application is respectfully solicited.

Respectfully submitted,



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Encl: New Figure 10
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